WHAT IS CLAIMED IS;

1. A device for installing a piston ring comprising:

a base that has a through-hole passing through the base in a vertical direction;

a guide member disposed in the through-hole and fixed to the base, for positioning a piston in the vertical direction while receiving a head of the piston suspended downwardly in the vertical direction, and guiding a piston ring while widening a diameter of the piston ring by means of an outer peripheral surface of the guide member;

a piston pressing member disposed above the base and supported movably toward a concave part of the guide member, and having a centering part that performs a centering action while depressing the piston suspended downwardly in the vertical direction;

a driving mechanism disposed on the base, for driving the piston pressing member at least in the vertical direction; and

a ring feeding mechanism that feeds the piston ring guided by the guide member upwardly.

2. The device for installing a piston ring as set forth in Claim 1, wherein

the centering part is a tapered inner wall surface widened downwardly so as to come into contact with an edge of an upper end of the suspended piston.

3. The device for installing a piston ring as set forth in Claim 1, wherein

the driving mechanism is formed so as to obliquely downwardly move the piston pressing member and then vertically downwardly move the piston pressing member when the piston pressing member is driven toward the concave part, and

the piston pressing member has a notch part formed so as not to come into contact with a connecting rod of the suspended piston.

4. The device for installing a piston ring as set forth in Claim 3, wherein

the driving mechanism includes:

a vertically movable member driven in the vertical direction;

a horizontally movable member that holds the piston pressing member, and that is supported movably horizontally with respect to the vertically movable member; and

a cam member that exerts a cam action onto a follower provided on the horizontally movable member.

5. The device for installing a piston ring as set forth in Claim 1, wherein

the guide member includes a lower guide part formed as an outer peripheral surface with the same diameter over a predetermined length, and the lower guide part has an annular

convex part that is formed at a halfway position in an axial direction thereof and that restricts a downward movement of the piston ring.

6. The device for installing a piston ring as set forth in Claim 1, wherein

the concave part of the guide member is provided with at least three positioning blocks to come into contact with the head of the piston and to position the piston in the vertical direction.

7. The device for installing a piston ring as set forth in Claim 1, wherein

the base is provided thereon with a ring sensor that detects a piston ring immediately before the piston ring is disengaged from an upper end of the guide member.

8. A method of installing a piston ring comprising:

a depressing step of depressing a piston so as to locate the piston at a predetermined position while centering the piston suspended downwardly in a vertical direction; and

a ring feeding step of vertically upwardly feeding a piston ring toward the piston located at the predetermined position according to the depressing step while widening a diameter of the piston ring, and, releasing a state of widening the diameter of the piston ring when the piston ring reaches the same height as a ring groove of the piston.

9. The method of installing a piston ring as set forth in Claim 8, wherein

in the depressing step, a tapered inner wall surface widened downwardly is obliquely downwardly moved, and then is vertically downwardly moved so as to come into contact with an edge of an upper end of the suspended piston.